This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-11 (Canceled)

12. (Currently Amended) An image processing apparatus comprising:

a first element array having a plurality of photoelectric conversion elements arranged in a line;

a second element array shifted from said first element array by a predetermined distance in a main scanning direction and having a plurality of photoelectric conversion elements arranged in a line;

a first shift register for serially transferring signals from said first element array in response to transfer pulses;

a second shift register for serially transferring signals from said second element array in response to the transfer pulses;

a pulse supply unit for supplying at least three types of the transfer pulses having different phases to said first ~~and second~~ shift ~~registers~~ register and supplying at least three types of the transfer pulses having different pulses to said second shift register; and

a driving circuit for inputting said at least three types of the transfer pulses having different phases to said pulse supply unit,

wherein said first and second shift registers ~~and performing control to~~ add up two signals outputted from two adjacent elements ~~together~~ during serially transferring the signals in response to the at least three types of transfer pulses having different phases ~~in said shift register~~.

Claims 13-14 (Canceled)

15. (Previously Presented) The apparatus according to claim 12, wherein said pulse supply unit can supply two pulses having different phases to said first and second shift registers so as to output signals from said first and second element arrays without addition.

16. (Previously Presented) The apparatus according to claim 12, wherein said pulse supply unit supplies, in a first transferring mode, said at least three types of the transfer pulses having different phases to said first and second shift registers to perform control to add signals from adjacent elements, and, in a second transferring mode, two types of the transfer pulses having different phases to said first and second shift registers so as to output signals from said first and second pixel arrays without addition.

17. (Previously Presented) The apparatus according to claim 12, further comprising:

a light source for irradiating an original with light or making light pass through the original; and

imaging means for forming light reflected by the original into an image on said first and second element arrays.

18. (Previously Presented) The apparatus according to claim 17, further comprising:

analog gain control means for controlling an analog gain of a signal output from said first and second element arrays; and

an analog/digital converter for digitizing the signal controlled by said analog gain control means.

19. (Original) The apparatus according to claim 18, further comprising shading correction means for performing shading correction for the digitized signal.

Claims 20-21. (Canceled)

22. (Currently Amended) A processing method for an image processing apparatus including a first element array having a plurality of photoelectric conversion elements arranged in a line, a second element array shifted from the first element array by a predetermined distance in a main scanning direction and having a plurality of photoelectric conversion elements arranged in a line, a first shift register, and a second shift register, comprising steps of:

transferring image signals from said first element array to said first shift register and from said second element array to said second shift register, in parallel; and

serially transferring the image signals in said first and second shift registers in accordance with at least three types of transfer pulses having different pulses so as to add up two signals outputted from two adjacent elements ~~together~~ during serially transferring the signals ~~in said first and second shift registers~~.

23. (Previously Presented) The apparatus according to claim 16, wherein at least one type of the transfer pulses supplied by said pulse supply unit in the first transferring mode has a frequency which is twice as high as that of the transfer pulses supplied in the second transferring mode.

24. (Previously Presented) The apparatus according to claim 16, wherein, in the second transferring mode, said pulse supply unit alternately repeats a first operation of continuously outputting signals from the first element array, and a second operation of continuously outputting signals from the second element array.

25. (Previously Presented) The apparatus according to claim 16, wherein, in the second transferring mode, said pulse supply unit continuously outputs signals from the first element array.